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***Table 4.1: CCR VERSUS CAMA***

| FACTOR | N.C. CAMA Coal Ash Management Act of 2014. Law on 8/20/2014 | EPA CCR Rule Final on 12/19/2014 and Effective on 10/19/2015 | CAMA Amendments Law on 7/14/2016 | Water Infrastructure Improvements for the Nation (WIIN) Act of 2016. Law on 12/16/2016. |
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| **1. APPLICABILITY** | All ash basins , landfills, and beneficial reuses. Focus is on basin closure. | Surface impoundments, landfills, and inactive surface impoundments that impound water at stations with generation. Beneficial uses. Regulates CCR disposal. | Deletes references to Coal Ash Management Commission. Review of DEQ's quarterly reports left to Environmental Review Commission. | Establishes a state permit program for coal ash impoundments to be supervised by the U.S. Environmental Protection Agency. Amends the Resource Conservation and Recovery Act (RCRA), changing the EPA's self-implementing coal ash rule into an EPA-authorized state permit program. The EPA will only approve of the state programs if they incorporate already-established federal requirements. |
| **2. BASIN CLOSURE** | Required timing is based on risk rankings or "High Priority" designation. | Required if basins cannot meet various safety and environmental criteria. High priority is placed on stability evaluation. | | |
| **3. BASIN EVALUATION** | All basins must close. Subjective risk ranking determines closure method. Ash basins to be risk-ranked by NCDEQ based on 9 factors in CAMA. CAMC reviews and approves risk rankings. | Basins can remain operating. Demonstrations that basins meet all Dam Safety, Liner, Groundwater, and Location restrictions must be made within 18 to 42 months of rule publication. Basins must be closed if demonstrations can't be made. | § 130A-309.213. Prioritization of coal combustion residuals surface impoundments. Deletes specific criteria under (a) to be evaluated by DEQ in assessing surface impoundment risk. (d)(1) requires the DEQ to a low risk classification if it (a) Has established permanent water supplies as required for the impoundment pursuant to G.S. 130A-309.211(c1) and (b) Has rectified any deficiencies identified by, and otherwise complied with the requirements of, any dam safety order issued by the Environmental Management Commission for the impoundment pursuant to G.S. 143-215.32. (c) Other impoundments are classified as intermediate risk. § 130A-309.216. Ash beneficiation projects (new) | |
| **4. CLOSURE METHOD** | Cap in place allowed for "low risk" basins only. Clean closure via excavation required for "high priority", "high risk", and "intermediate risk" impoundments. | Cap in place and clean closure allowed. Requirements for each method is provided. | | |
| **5. CLOSURE TIMING** | Closure timing is tied to risk ratings: 5, 10, or 15 years. | Forced closures within 5 years with possible extensions for certain factors (i.e., no alternate capacity available, size of impoundment). Up to 15.5 years in some cases. | | |
| **6. CONVERSION TO DRY ASH DISPOSAL** | Requires dry fly ash disposal by Dec 2018 and dry bottom ash disposal by Dec 2019. | Does not expressly address conversion to dry ash disposal. However, in some cases, conversion is driven by basin closure requirements. EPA extended timelines to accommodate Steam Electric Effluent Limitations Guidelines that proposes to require conversion to dry ash disposal. | | |
| **7. ENFORCEMENT** | State regulatory agency with Coal Ash Management Committee oversight. Enforcement through state agency action. | Self-implementing. Enforced through citizen suits in federal court. | | TITLE II--WATER AND WASTE ACT OF 2016 Subtitle C--Control of Coal Combustion Residuals.<br>(Sec. 2301) This bill amends the subtitle D (Resource Conservation and Recovery Act of 1976) of the Solid Waste Disposal Act to establish a permit program for coal combustion residuals (coal ash) that states, after approval by the EPA, may elect to administer in lieu of a federal regulatory program. The EPA must review the programs at least once every 12 years, or on the request of a state.<br>The EPA may use specified authorities to enforce the prohibition against open dumping with respect to a coal combustion residual unit. |

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| **8. GROUNDWATER MONITORING** | Groundwater assessment required 180 days after DEQ's approval of the plan (pending??). Monitoring done at compliance boundary. Measuring for 15A NCAC 02L.0202 criteria (limit in parentheses). In Items IV.134-185 of the Plea Agreement, Duke acknowledged that water from seeps may transport pollutants such as aluminum (NL), arsenic (10 µg/L), barium (700 µg/L), boron (700 µg/L), cadmium (2 µg/L), chloride (250 mg/L), chromium (100 µg/L), copper (1 mg/L), fluoride (2 mg/L), iron (300 µg/L), lead (15 µg/L), manganese (50 µg/L), nickel (100 µg/L), selenium (20 µg/L), sulfate (250 mg/L), thallium (NL), zinc (1 mg/L), and TDS (NL). | Required within 30 months of rule publication (DATE). Monitoring done at waste boundary. Measuring for statistically significant increases over background (CONSTITUENTS AND LEVELS). | Review of DEQ's quarterly reports left to Environmental Review Commission. § 130A-309.211. Groundwater assessment and corrective action; drinking water supply well survey and provision of alternate water supply; reporting. New (c1) requires no later than October 15, 2018, the owner of a coal combustion residuals surface impoundment shall establish permanent replacement water supplies for (I) each household that has a drinking water supply well located within a one-half mile radius from the established compliance boundary of a coal combustion residuals impoundment, and is not separated from the impoundment by the mainstem of a river, as that term is defined under G.S. 143-215.22G, or other body of water that would prevent the migration of contaminants through groundwater from the impoundment to a well and (ii) each household that has a drinking water supply well that is located in an area in which contamination resulting from constituents associated with the presence of a coal combustion residuals impoundment is expected to migrate. | |
| **9. STRUCTURAL FILLS** | Governed as beneficial reuse solution with specific permitting and construction criteria (SPECIFY). CAMA regulated structural fills >8,000 tpy or 80,000 tons per project. Small structural fills <8,000 tons per acre or 80,000 tons per project are deemed permitted. Large SF >8,000 tons per acre or 80,000 tons per project require liners, caps, leachate control, groundwater monitoring, and financial assurance. NC CCP rule will add requirements to make as stringent as EPA CCR. | Must qualify as beneficial reuse under the rule or meet the requirements for a CCR landfill. EPA CCR requires reporting and environmental demonstrations for fills >12,400 tons. | | |
| **10. BENEFICIAL USE OF CCP** | Draft of State CCP rule to be consistent with CAMA, coordinated with NCDOT and UNC Charlotte, and go to EMC in July 2016. NCDEQ will incorporate into current DWM and DWR beneficial use/reuse rules. | | | |
| **11. COMPREHENSIVE SITE ASSESSMENTS (CSA) AND CORRECTIVE ACTION PLANS (CAP)** | CSA and CAP containing over 1,000 pages each were submitted by Duke to NCDEQ. Largest investigation of its kind was completed over six months. Duke drilled over 870 wells and collected over 7,000 samples. However, this extensive work could not determine the horizontal and vertical extent of contamination or background levels of constituents critical to prioritization. **DEQ is unable to determine with current (12/31/15) data is Duke coal as ponds are impacting wells but there are known impacts at Sutton and Asheville.** In 476 wells sampled, DHHS issued do not drink notices for 424 wells mainly for vanadium and hexavalent chromium BUT only 12 wells exceeded SDWA levels (7 for lead and 5 for arsenic) which could be attributed to poor well construction (lead) or naturally occurring (arsenic). | | | |
| **12. DECANTING AND DEWATERING** | On August 28, 2014, NCDEQ authorized decanting to begin under existing NPDES permits. Complete dewatering requires NPDES permit modification but is necessary for wet ash removal and must address engineered and non-engineered seeps. NPDES permits are on hold for 13 of 14 Duke facilities. | On September 10, 2014, EPA ordered NC decanting halted. On December 14, 2015, EPA authorized NC to resume decanting but is still unsure on permitting seeps that may be "waters of the US" -- a problem at 894 US impoundments. EPA appears to be backing away from written Hanlon Policy. | | |
| **13. GROUNDWATER AND DRINKING WATER STANDARDS** | NC DHHS has the lowest groundwater standard (10 ppb) in the US but issues do not drink notices for 0.07 ppb for Cr(VI) and 0.03 ppb for Vanadium. More than 70% of the US public water supplies exceed DHHS screening levels for Cr(VI) or Vanadium. | Federal SWDA standard is 100 ppb Total Chromium and has no standard for Vanadium. | | |